

Approved
7/3/03 R

ACTGTCTGGAAC TGGACTGAGTCACCAAAAGGCGAATGGCTTCATCTTATAAAATGTCTGAACAAAGCACA
ACTTCTGAGCACATTTTACAGAAGACATGTGATCACCTGATCCTGACTAACC GTTCTGGATTAGAGACAGA
CTCAGTAGCAGAGGAAATGAAGCAGACTGTGGAGGGACAGGGGCATACAGTGC ACTGGGCAGCTCTCCTGA
TACTCGCGGTGATAATACCCACCATTGGTGGGAACATCCTTGTGATTCTGGCTGTTGCACTGGAGAAAAGG
CTGCAGTACGCTACCAACTACTTTTAAATGTCCTTGGCGATAGCAGATTGCTGGTTGGATTGTTTGTGAT
GCCGATTGCCCTCTTGACAATCATGTTTGAGGCTATATGGCCCCTCCCACTGGCCCTGTGTCCTGCCTGGT
TATTCCTCGATGTTCTCTTTTCAACTGCCTCCATCATGCATCTCTGTGCCATTTCCCTGGACCGCTATATA
GCCATCAAAAAGCCAATTCAGGCCAATCAGTGCAACACCCGGGCTACTGCATTTCATCAAGATTACAGTGGT
ATGGTTAATTTCAATAGGCATCGCCATCCCAGTCCCTATTAAAGGAATCGAGACTGATGTGATTAATCCAC
ACAATGTACCTGTGAGCTGACAAAGGACCGCTTTGGCAGTTTTATGGTCTTTGGGTC ACTGGCTGCTTTC
TTCGTACCTCTCACCATCATGGTAGTCACTTACTTTCTCACCATTACACTTTACAGAAGAAAGCTTACTT
GGTCAAAAATAAGCCACCTCAACGCCTAACACGGTGGACTGTGCCACAGTTTTCTTAAGGGAAGACTCAT
CCTTTTCATCACCAGAAAAGGTGGCAATGCTGGATGGGTCTCACAGGGATAAAATTCTACCTAACTCAAGT
GATGAGACACTTATGCGAAGAATGTCTCAGTTGGAAAAAGATCAGCCCAAACCATTTCTAATGAGCAGAG
AGCCTCGAAGGCCCTTGGAGTCGTGTTTTCTCTTTTCTGCTTATGTGGTGGCCCTTTTTTTATTACAAATC
TAACTTTAGCTCTGTGTGATTCTTGCAATCAGACCACTCTCAAACACTCCTGGAGATATTTGTGTGGATA
GGCTACGTTTTCTCGGGGGTGAATCCTCTGATCTATACTCTTCAATAAGACATTTCGGGAAGCATTTGG
CAGGTACATCACCTGCAATTACCGAGCCACAAAGTCAGTAAAAGCACTTAGGAAGTTTTCCAGTACACTTT
GTTTTGGGAATTCAATGGTAGAAACTCTAAATTTTTCACAAAACATGGAATTCGAAATGGGATCAACCCT
GCCATGTACCAGAGCCCAATGAGGCTCCGATGTTCAACCATTAGTCCTCATCAATCATCCTCCTCGATAC
CCTTCTCACTGAAAACGATGGCGACAAAGCGGAAGAGCAGGTCAGCTACATATTGCAGGAACGGGCCGGCC
TCATCTTGAGAGAGGGTGATGAGCAGGACGCACGCGCACCATGGCAGGTTCAAGAGTGA (SEQ ID NO:1)

Sequence of

MASSYKMSEQSTTSEHILQKTC DHLILTNRS GLETD SVAEEMKQTVEGQGHTVHWAALLILAVI IPTIGGN
ILVILA VALEKRLQYATNYFLMS LAIADLLVGLFVMPIALLTIMFEAIWPLPLALCPAWLFLDVLFSTASI
MHLCAISLD RYIAIKKPIQANQC NTRATAFIKITV VWLISIGIAIPVPIKGIETDVINPHNVTCELTKDRF
GSF MVFGSLAAFFVPLTIMVV TYFLT IHTLQKKAYLVKNKPPQRLTRWTVPTVFLREDSSFSSPEKVAMLD
GSHRDKILPNSSDETLMRMSSVGKRS AQTISNEQRASKALGVVFFLLMWC PFFITNLTLALCDSCNQ T
TLKTLLEIFVWIGYVSSGVNPLIY TLFNKTFREAFGRYITCN YRATKSVKALRKFSSTLCFGNSMVENSKF
FTKHGIRNGINPAMYQSPMRLRCSTIQSSSIILLDTLLTENDGDKAEEQVSYILQERAGLILREGDEQDAR
APWQVQE (SEQ ID NO:2)

FIGURE 1

Underlined = deleted in targeting construct

Bold = sequence flanking Neo insert in targeting construct

ACTGTCTGGA**CTGG****ACTGAGTCACCAAAAGGCGAATGGCTTCATCTTATAAAATGTCTG**
AACAAAGCACAACTTCTGAGCACATTTTACAGAAGACATGTGATCACCTGATCCTGACTA
ACCGTTCTGGATTAGAGACAGACTCAGTAGCAGAGGAAATGAAGCAGACTGTGGAGGGAC
AGGGGCATACAGTGC**ACTGGGCAGCTCTCCTGATACTCGCGGTGATAATACCCACCATTG**
GTGGGAACATCCTTGTGATTCTGGCTGTTGCACTGGAGAAAAGGCTGCAGTACGCTACCA
ACTACTTTTTTAATGTCCTT **GGCGATAGCAGATTTGCTGGTTGGATTGTTTGTGATGCCGA**
TTGCCCTCTTGACAATCATGTTTGAGGCTATATGGCCCCCTCCCACTGGCCCTGTGTCCTG
CCTGGTTATTCTCGATGTTCTCTTTTCAACTGCCTCCATCATGCATCTCTGTGCCATTT
CCCTGGACCGCTATATAGCCATCAAAAAGCCAATTCAGGCCAATCAGTGCAACACCCGGG
CTACTGCATTTCATCAAGATTACAGTGGTATGGTTAATTTCAATAGGCATCGCCATCCAG
TCCCTATTAAAGGAATCGAGACTGATGTGATTAATCCACACAATGTCACCTGTGAGCTGA
CAAAGGACCGCTTTGGCAGTTTTATGGTCTTTGGGTCACTGGCTGCTTTCTTCGTACCTC
TCACCATCATGGTAGTCACTTACTTTCTCACCATTACACTTTACAGAAGAAAGCTTACT
TGGTCAAAAATAAGCCACCTCAACGCCTAACACGGTGGACTGTGCCCACAGTTTTCTTAA
GGGAAGACTCATCCTTTTTCATCACCAGAAAAGGTGGCAATGCTGGATGGGTCTCACAGGG
ATAAAATTCTACCTAACTCAAGTGATGAGACACTTATGCGAAGAATGTCCTCAGTTGGAA
AAAGATCAGCCCCAAACCATTTCTAATGAGCAGAGAGCCTCGAAGGCCCTTGGAGTCGTGT
TTTTCTCTTTTCTGCTTATGTGGTGCCCCCTTTTTTTATTACAAATCTAACTTTAGCTCTGT
GTGATTCCCTGCAATCAGACCACTCTCAAAACACTCCTGGAGATATTTGTGTGGATAGGCT
ACGTTTTCCTCGGGGGTGAATCCTCTGATCTATACTCTTCAATAAGACATTTTCGGGAAG
CATTTGGCAGGTACATCACCTGCAATTACCGAGCCACAAAGTCAGTAAAAGCACTTAGGA
AGTTTTCCAGTACACTTTGTTTTGGGAATTCAATGGTAGAAAACCTCTAAATTTTTCACAA
AACATGGAATTCGAAATGGGATCAACCCTGCCATGTACCAGAGCCCAATGAGGCTCCGAT
GTTCAACCATTTCAGTCCTCATCAATCATCCTCCTCGATACCCTTCTCACTGAAAACGATG
GCGACAAAGCGGAAGAGCAGGTACGCTACATATTGCAGGAACGGGCCGGCCTCATCTTGA
GAGAGGGTGATGAGCAGGACGCACGCGCACCATGGCAGGTTCAAGAGTGA

CCCGGGG

FIGURE 2A

319 bp

Cassette

* Not drawn to scale

5' >GGCGATAGCAGATTGCTGGT
TGGATTGTTTGTGATGCCGATTGC
CCTCTTGACAATCATGTTTGGTGA
GTATTTCCCCTTGTTCCCTGCCACT
GAACACTACTAACGTAGTGAAATG
GACACTCACTGACCTTTATTTTGT
TTGAAATAAAAAGAAGGACCTGGAT
TAAAAACACAGAAGGGAACATTCC
TTCATTTTTC A<3'
(SEQ ID NO:4)

FIGURE 2B